

IN THE CLAIMS:

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Claim 1. (currently amended) A liquid crystal display drive method, said liquid crystal display comprising:
a first electrode located on a first substrate, and
a second electrode located on a second substrate,
said substrates facing each other with liquid crystal filled there between,
wherein pictures are displayed by means of the a voltage signal impressed between said first and second electrodes to select one state of incident light: either reflected or non-reflected; or either transmitted or non-transmitted; or either polarized or non-polarized; or twisted or non-twisted, and

wherein a drive voltage waveform consisting of a display signal period and a control signal period irrelevant to display is used within a given drive time, or a period of plural frames or one frame, and

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wherein said drive voltage waveform consists of a predetermined number of bit planes and the control signal period occurs during at least one preselected bit plane within the predetermined number of bit planes.

Claim 2. (original) The liquid crystal display drive method as claimed in claim 1, wherein, in said display signal period, the drive voltage waveform for selecting the state of incident light is a combination of positive voltage signals, negative voltage signals and/or 0 V signal; the absolute values of these voltages or their signal widths are different and thus the waveform has an imbalance in positive and negative charges.

Claim 3. (original) The liquid crystal display drive method as claimed in claim 1, wherein, in said control signal period, a reset voltage which has the polarity opposite to that of drive voltage waveform in said display signal period or is continuous DC voltage is impressed to suppress generation of internal DC voltage, caused by ionic polarization in the liquid crystal.

Claim 4. (original) The liquid crystal display drive method as claimed in claim 3, wherein the time ratio of said control signal period to the whole drive voltage waveform period is 5% or more and less than 50%.

Claim 5. (original) The liquid crystal display drive method as claimed in claim 3, wherein a detection circuit for detecting an electric charge imbalance which occurs within a given time or a period of plural frames or one frame is used to determine the voltage polarity and level in said control signal period, thereby suppressing generation of internal DC voltage caused by ionic polarization in the liquid crystal.

Claim 6. (currently amended) A liquid crystal display drive method, said liquid crystal display comprising:

a first electrode located on a first substrate, and

a second electrode located on a second substrate,

said substrates facing each other with liquid crystal filled there between,

wherein pictures are displayed by means of the a voltage signal impressed between said first and second electrodes to select one state of incident light: either reflected or non-reflected; or either transmitted or non-transmitted; or either polarized or non-polarized; or twisted or non-twisted;

wherein a drive voltage waveform consisting of a display signal period and a control signal period irrelevant to display is used within a given drive time, or a period of plural frames or one frame;

wherein said drive voltage waveform consists of a predetermined number of bit planes and the control signal period occurs during at least one preselected bit plane within the predetermined number of bit planes; and

wherein one of the two states, either on or off, is chosen to select the state of incident light in said display signal period.

Claim 7. (original) The liquid crystal display drive method as claimed in claim 6, wherein, when one of the two states, On or Off, which is longer than the response time of said liquid crystal, is to be held, the next selection signal is applied after

application of voltage signal while the desired transmittance or reflectance is being maintained.

Claim 8. (original) The liquid crystal display drive method as claimed in claim 6, wherein said liquid crystal is a ferroelectric liquid crystal or antiferroelectric liquid crystal.

Claim 9. (original) The liquid crystal display drive method as claimed in claim 6, wherein the liquid crystal display is a reflective liquid crystal display which comprises a silicone back plane and a ferroelectric liquid crystal.

Claim 10. (original) The liquid crystal display drive method as claimed in claim 6, wherein, in said display signal period, drive voltage waveform as a combination of positive and negative voltages and/or 0 V is used as the voltage signal to select one of the two states, either On or Off.

Claim 11. (original) The liquid crystal display drive method as claimed in claim 10, wherein said drive voltage waveform is a combination of positive voltage and negative voltage signals and/or 0 V signal; the absolute values of these voltages or their signal widths are different; and the waveform has an imbalance in positive and negative charges.

Claim 12. (original) The liquid crystal display drive method as claimed in claim 11, wherein, in said control signal period, a reset voltage which has the polarity opposite to that of drive voltage waveform in said display signal period or is continuous DC voltage is impressed to suppress generation of internal DC voltage, caused by ionic polarization in the liquid crystal.

Claim 13. (original) The liquid crystal display drive method as claimed in claim 12, wherein the time ratio of said control signal period to the whole drive voltage waveform period is 5% or more and less than 50%.

Claim 14. (original) The liquid crystal display drive method as claimed in claim 12, wherein a detection circuit for detecting an electric charge imbalance which occurs in a given time or a period of plural frames or one frame is used to determine the voltage polarity and level in said control signal period, thereby suppressing generation of internal DC voltage caused by ionic polarization in the liquid crystal.

Claim 15. (original) The liquid crystal display drive method as claimed in claim 6, wherein, in said display signal period, the voltage signal for selecting one of the two states, either On or Off, is a combination of positive voltages only and the voltage signal for selecting the other state is a combination of negative voltages only and such drive voltage waveform is used.

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Claim 16. (original) The liquid crystal display drive method as claimed in claim 15, wherein said drive voltage waveform is a combination of positive voltage and negative voltage signals and/or 0 V signal; the absolute values of these voltages or their signal widths are different; and as the impressed voltage waveform in the period of selection of one state, the waveform has an imbalance in positive and negative charges.

Claim 17. (original) The liquid crystal display drive method as claimed in claim 16, wherein, in said control signal period, a reset voltage which has the polarity opposite to that of drive voltage waveform in said display signal period or is continuous DC voltage is impressed to suppress generation of internal DC voltage, caused by ionic polarization in the liquid crystal.

Claim 18. (original) The liquid crystal display drive method as claimed in claim 17, wherein the time ratio of said control signal period to the whole drive voltage waveform period is 5% or more and less than 50%.

Claim 19. (original) The liquid crystal display drive method as claimed in claim 17, wherein a detection circuit for detecting an electric charge imbalance in a

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given time or a period of plural frames or one frame is used to determine the voltage polarity and level in the control signal period, thereby suppressing generation of internal DC voltage caused by ionic polarization in the liquid crystal.
